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10/521,906

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Ludo Jean Maria Mathilde Van Schepdael

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EXAMINER

WALDBAUM, SAMUEL A

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/521,906

**Applicant(s)**VAN SCHEPDAEL, LUDO JEAN  
MARIA MATHILDE**Examiner**

SAMUEL A. WALDBAUM

**Art Unit**

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-26 and 28-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-26, 28-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. In the reply filed March 20, 2008 the applicant has amended claims 17, 29 and 31-32. Claim 27 was cancelled. The previous rejection is hereby withdrawn in favor the new rejection found below.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claims 17-26, 29-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikawa et al (U.S. 6,491,518, hereafter '518) in view of Ishii (U.S. 4,471,949, hereafter '949) and Van Den Berg et al (U.S. 6,491,882, hereafter '882) and Propp et al (U.S. 6,652,654, hereafter '654).***

4. Claims 17, 18, 22, 24 and 28: '518 teaches the batch processing of substrates in high pressure (col. 1, lines 20-50 and col. 13, lines 1-65), '518 teaches the use of a cylindrical pressure chamber with a aperture (col. 13, lines 1-67). '518 does not teach the use of a piping system through the lid and does not teach the necessary lid for the chamber and does not teach the restraining means. '949 is a high pressure chamber. '949 teaches a chamber with two apertures and two lids (fig. 1, col. 2 lines 45-69) where a piping system (fig. 1, part 5) pass

Art Unit: 1792

through a lid (fig. 1, parts 3 and 4) which extends along the axial direction into the chamber (fig. 1, shows that the lids extend in the cylindrical chamber, part 2) with the use of a sealing ring (fig. 1 parts 6 and 7) where the lids axial slide along the inner wall to full seal (col. 2, lines 45-69). All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention, meaning that the pressure chamber taught by '949 in apparatus '518 to process the substrates under high pressure.

'518 and '949 do not teach a restrain means. '949 teaches that press mechanism can help seal the pressure chamber (col. 2, lines 45-69). '882 is a high pressure chamber. '882 teaches the use of a retaining means, the bounding frame (fig. 1, part 4 and the half circle piece at the top and bottom that fits in the arch) where the chamber is movable in and out of the restraining means (col. 3, lines 15-65) to reinforce and hold the pressure chamber together (col. Lines 15-65). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have taken the restraining means as taught by '882 in apparatus '518 in view of '949 to reinforce and hold the pressure chamber together.

'882 teaches that the chamber is slidable (col. 3 lines 15-65) not the restraining means. All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention, meaning that the sliding mechanism for the chamber as taught by '882 can used on the restraining means allowing it to slide over the pressure chamber.

Claims directed to apparatus must be distinguished from prior art in terms of structure rather than function. *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA). “[A]pparatus claims cover what a device is not what a device does” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). ‘518, ‘949 and ‘882 do not teach that a supercritical fluid is used to create the high pressure. ‘654 is a substrate processing apparatus. ‘654 teaches that the substrate can be processed in a high pressure vessel with the use of a supercritical fluid (col. 1, lines 60-67 and col. 2, lines 1-15). ‘654 teaches that it is known to use a supercritical fluid to process a substrate, therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made that ‘518 in view of ‘949 and ‘882 is capable of using a supercritical fluid as taught by ‘654 to have created the high pressure to process the substrate,

5. Claim 19: ‘882 teaches that a lid has a holding part (fig. 2, chamber is part 3, and the lid is part 5, where the holder is the part sticking out from the lid)

6. Claim 20: ‘882 shows that the bounding frame on piece (fig. 1) composed of straight elements on the side (fig. 1) and arch element at one end (fig. 1) and a flat element with an arch inner shape at the other end (fig. 1). It would have been an obvious matter of design choice to have made the flat element arch shaped to correspond to the inner arch shape that it currently has, since such a modification would have involved a mere change in the shape of a component. A change of shape is generally recognized as being within the ordinary level of skill in the art. *In re Dailey*, 357 F.2<sup>nd</sup> 669, 149 USPQ 1966.

‘882 discloses the claim invention except for the bounding frame is one piece instead of multiple parts. It would have been obvious to one having ordinary skill in the art at the time the

Art Unit: 1792

invention was made to have made the bounding frame in multiple parts, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. In re Dulberg, 289 F2d 522, 5223 129 USPQ 348, 349 (CCPA 1961).

7. Claim 21: '882 teaches two substantially cylindrical restraining pieces (fig. 1, the two half circle pieces right adjacent to the inner arch to the end pieces).

8. Claim 23: '518 teaches that the piping extends outs from the chamber (fig. 15) and '949 teaches that the piping extends from the lid (fig. 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have put a groove or slot in the bounding frame taught by '882 in apparatus '518 in view of '949 so that that the pressure exerted on the pipe from the restrain means to hold the pressure chamber together does not crush or damage the pipe.

9. Claims 25 and 26: '882 teaches that the vessel can be made out of a glass fiber embedded in a plastic (col. 2, lines 1-25).

10. Claim 29: '513 in view of '949 and '882 as seen in above rejected claim teaches the claim apparatus. The apparatus would operate under ordinary condition where the substrate is put in the chamber, the lid is placed on the chamber, the restraining means (bounding frame) is slide to surround the vessel, the processing fluid is added for a certain time and after the completion of the cycle the restraining means is moved away where the lid is then removed and the substrate are removed.

11. Claims 30 and 32: '513 teaches placing them in batch (col. 1, lines 20-50 and col. 13, lines 1-65) which means more than one substrate is placed in the pressure vessel.

***Claim 31 rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikawa et al (U.S. 6,491,518) in view of Ishii (U.S. 4,471,949) and Van Den Berg et al (U.S. 6,491,882) and Propp et al (U.S. 6,652,654) as applied to claim 29 above, and further in view of and Randolph et al (U.S. pgpub 2002/0132007, hereafter '007).***

'518, '949 '882 and '654 teach all the limitations of claim 29.

12. Claim 31: '518, '949 '882 and '654 do not teach the type of super critical fluid used. '007 teaches that the supercritical fluid can be CO<sub>2</sub>, N<sub>2</sub>O, ethane and propane ([0090]-[0095]) for batch operations ([0095]). All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention, meaning that the supercritical fluid as taught by '654 using the composition of '007 in apparatus '513 in view of '949, '882 and '654 can produce a high pressure in the processing vessel for processing the substrate.

#### ***Response to Arguments***

13. Applicant's arguments filed March 20, 2008 have been fully considered but they are not persuasive.

14. No evidence has been provided supporting the argument that the structure of prior art reference taught by '518 in view of '949, '882 and '654 is incapable of not handling a supercritical or near supercritical fluid, therefore these arguments are moot.

15. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on

Art Unit: 1792

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

16. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAMUEL A. WALDBAUM whose telephone number is (571)270-1860. The examiner can normally be reached on M-TR 6:20-3:50, F 6:30-10:30 est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. A. W./  
Examiner, Art Unit 1792

/FRANKIE L. STINSON/  
Primary Examiner, Art Unit 1792